

Letter to the Editor

Some insights into the derivation and early uses of the word 'probiotic'

The word 'probiotic' has been in common use for more than 25 years. Definitions of it have been refined as more experience has been gained, the most recent being 'live microorganisms which when administered in adequate amounts confer a health benefit on the host' (Reid *et al.* 2003).

Misunderstandings still remain regarding the derivation of the word and also when it was first used. It is often stated (for example, Fuller 1992; Alvarez-Olmos & Oberhelman, 2001; Teitelbaum & Walker, 2002) that the word was coined from the Greek, specifically $\pi\rho + \beta\iota\omicron\tau\omicron\varsigma$, meaning literally 'for life' (an antonym of, not the opposite to, 'antibiotic'). However, while $\beta\iota\omicron\tau\omicron\varsigma$ does indeed mean 'life', the preposition $\pi\rho$ translates more as 'in front of, before'. It seems better to give 'pro' in this context its meaning in Latin, making 'probiotic' an etymological hybrid (the Latin equivalent would be 'provital').

Parker (1974) seems to have been the first to use the word in relation to the interactions of micro-organisms with the whole animal or human host: 'we refer to organisms and substances which contribute to intestinal microbial balance as probiotics'. The term had been used 1 year previously in much the same way by Fujii & Cook (1973), defined as 'compounds that build resistance to infection in the host but do not inhibit the growth of microorganisms *in vitro*', referring to synthetic chemicals that protected mice against infection with *Staphylococcus aureus*. Lilly & Stillwell (1965) had earlier used the word in a more limited sense following their observations of stimulation *in vitro* of growth of protozoa by other protozoa, giving the name probiotics to 'growth promoting factors produced by microorganisms'.

We believe the earliest use of the word probiotic was by Kollath (1953), to describe organic and inorganic supplements necessary to restore health to patients suffering a form of malnutrition resulting from eating too much highly refined food. One year later this idea was taken up by Vergin (1954), who further suggested that antibiotics can upset the microbial balance of the body, and that this can be restored by a proper diet of probiotics, including fermentation products. We would be interested to hear

from others whether there are records of this word having been used before 1953.

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